



Volunteer Lake Assessment Program Individual Lake Reports

SKATUTAKEE, LAKE, HARRISVILLE, NH

MORPHOMETRIC DATA

Watershed Area (Ac.):	11,200	Max. Depth (m):	6.2	Flushing Rate (yr ⁻¹)	8.3	Year	Trophic class	KNOWN EXOTIC SPECIES
Surface Area (Ac.):	261	Mean Depth (m):	2.9	P Retention Coef:	0.46	1988	MESOTROPHIC	
Shore Length (m):	6,100	Volume (m ³):	3,044,500	Elevation (ft):	1202	2006	MESOTROPHIC	

TROPHIC CLASSIFICATION

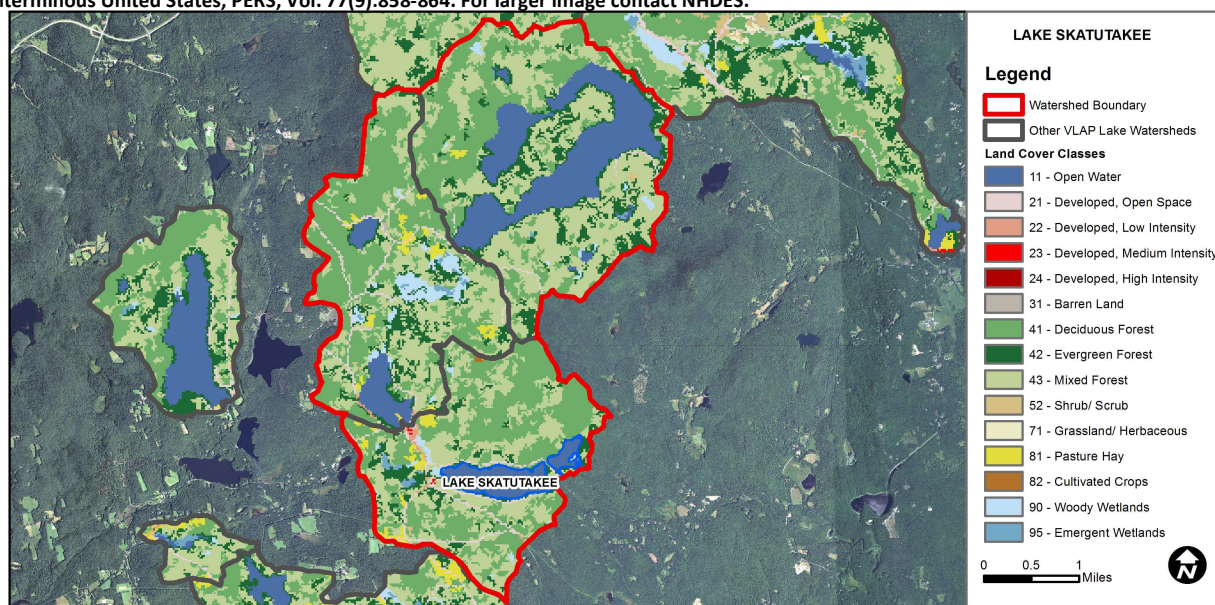
KNOWN EXOTIC SPECIES

The Waterbody Report Card tables are generated from the 2012 305(b) report on the status of N.H. waters, and are based on data collected from 2001-2011.

Designated Use	Parameter	Category	Comments
Aquatic Life	Phosphorus (Total)	Good	>=5 samples and median is < threshold but > 1/2 threshold value.
	pH	Slightly Bad	>10% of samples exceed criteria by a small margin (minimum of 2 exceedances).
	D.O. (mg/L)	Encouraging	< 10 samples and no exceedance of criteria. More data needed.
	D.O. (% sat)	Slightly Bad	>10% of samples exceed criteria by a small margin (minimum of 2 exceedances).
	Chlorophyll-a	Good	>=5 samples and median is < threshold but > 1/2 threshold value.
Primary Contact Recreation	E. coli	Encouraging	>2 samples exist that are > 75% of geometric mean criteria, but not enough samples to calculate geometric mean. No single sample exceedances. More data needed.
	Chlorophyll-a	Very Good	At least 10 samples with 0 exceedances of criteria.

WATERSHED LAND USE SUMMARY

Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011. Completion of the 2006 National Land Cover Database for the Conterminous United States, PERS, Vol. 77(9):858-864. For larger image contact NHDES.



Land Cover Category	% Cover	Land Cover Category	% Cover	Land Cover Category	% Cover
Open Water	14.2	Barren Land	0.03	Grassland/Herbaceous	0.01
Developed-Open Space	2.17	Deciduous Forest	33.73	Pasture Hay	1.57
Developed-Low Intensity	0.31	Evergreen Forest	10.55	Cultivated Crops	0.04
Developed-Medium Intensity	0.03	Mixed Forest	34.67	Woody Wetlands	2
Developed-High Intensity	0	Shrub-Scrub	0.09	Emergent Wetlands	0.44



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2012 DATA SUMMARY

OBSERVATIONS AND RECOMMENDATIONS (Refer to Table 1 and Historical Deep Spot Data Graphic)

- ♣ **CHLOROPHYLL-A:** Chlorophyll levels were stable in July and August and then spiked in September and were indicative of algal bloom conditions. Historical trend analysis indicates chlorophyll levels tend to fluctuate from year to year.
- ♣ **CONDUCTIVITY/CHLORIDE:** Epilimnetic (upper water layer) conductivity and chloride were low and approximately equal to the NH lake medians. Conductivity at all other stations except Spring Brook were low. Conductivity in Spring Brook is historically high likely due to natural conditions.
- ♣ **E. COLI:** E. coli levels in Goose Brook were elevated in August and September. A significant rain event occurred prior to the July sample and low flow conditions were also observed which could have contributed to the E. coli level. Spring Brook E. coli was elevated in August under similar conditions; however E. coli levels at this site were historically very low. The rain event prior to sampling likely washed bacteria into the tributary from either wildlife or domestic animal feces.
- ♣ **TOTAL PHOSPHORUS:** Epilimnetic and hypolimnetic (lower water layer) phosphorus levels were low and below the NH lake median. Historical trend analysis indicates a significantly decreasing (improving) epilimnetic phosphorus level since monitoring began. We hope to see this continue! Tributary phosphorus levels were also low and relatively stable throughout the summer.
- ♣ **TRANSPARENCY:** Transparency remained stable throughout the summer, however decreased slightly from 2011. Historical trend analysis indicates a relatively stable transparency since monitoring began.
- ♣ **TURBIDITY:** Deep spot turbidity was higher in September likely due to the elevated algal growth. Tributary turbidities were relatively low throughout the summer.
- ♣ **pH:** pH levels were slightly lower than desirable.
- ♣ **RECOMMENDED ACTIONS:** Since Spring Brook is still utilized by residents as a water supply source, educate watershed residents to "Scoop the Poop" and pick up after their pets as stormwater runoff can carry bacteria from feces into tributaries and the lake. The improving phosphorus level is a good sign. Keep up the great work!

Station Name	Table 1. 2012 Average Water Quality Data for LAKE SKATUTAKEE									
	Alk.	Chlor-a	Chloride	Cond.	E. Coli	Total P	Trans.		Turb.	pH
	mg/l	ug/l	mg/l	uS/cm	#/100ml	ug/l	m		ntu	
							NVS	VS		
Deep Epilimnion	2.33	9.32	4	38.0		10	2.58	2.75	1.20	6.35
Deep Hypolimnion				38.6		11			1.26	6.49
Goose Brook				37.5	220	12			1.01	6.48
Outlet				37.0		9			1.06	6.49
Spring Brook				128.7	93	8			0.47	6.50

NH Median Values: Median values for specific parameters generated from historic lake monitoring data.

Alkalinity: 4.9 mg/L

Chlorophyll-a: 4.58 mg/m³

Conductivity: 40.0 uS/cm

Chloride: 4 mg/L

Total Phosphorus: 12 ug/L

Transparency: 3.2 m

pH: 6.6

NH Water Quality Standards: Numeric criteria for specific parameters. Results exceeding criteria are considered a water quality violation.

Chloride: < 230 mg/L (chronic)

E. coli: > 88 cts/100 mL – public beach

E. coli: > 406 cts/100 mL – surface waters

Turbidity: > 10 NTU above natural level

pH: 6.5-8.0 (unless naturally occurring)

HISTORICAL WATER QUALITY TREND ANALYSIS

Parameter	Trend	Explanation
Chlorophyll-a	Variable	Data fluctuate annually, but are not significantly increasing or decreasing.
Transparency	Stable	Data not significantly increasing or decreasing.
Phosphorus (epilimnion)	Improving	Data significantly decreasing.

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